Managing
Multi Device Deployment

The Five Essential Factors

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Overview

A number of recent reports both in the UK and the USA have indicated a number of common issues facing organisations deploying Apps across multiple devices such as Android and iOS based mobile phones and tablets.

This short paper outlines these issues and illustrates how they can be handled to provide for a fast & cost effective App deployment that is synchronised across multiple devices.

When asked what mobile projects they were working on, the majority of organisations stated that developing both customer facing & employee facing Apps were both of prime importance.

Organisations said that the 5 essential factors that influenced the choice of technology for the development and deployment of mobile Apps were also the same as the issues that were causing them the most frustration.

These 5 factors and issues are:

1. **COST** of development and deployment and the cost of delays to market
2. **SPEED** of the App development and deployment and performance
3. **SECURITY** of the Apps and the host device
4. **INTEGRATION** of the Apps & devices to back end systems
5. **USABILITY & DESIGN** of the Apps

For those companies who have already stated developing and deploying Apps to multiple devices there are 3 primary driving factors for the costs exceeding their expectations:

1. An underestimation of the time & complexity needed for integration
2. Multiple design & build cycles needed to achieve the desired results
3. Required additional management and security functionality

In addition many organisations employed a number of different solution providers and technologies to deliver a single or several multi device projects simultaneously. This resulted in additional cost in managing the projects, synchronising the look and feel of the Apps, and deploying to and supporting of more than one device technology.

Deploying Business Apps

Business Apps tend to fall into one of four major types:

1. Apps designed for marketing
2. Apps designed to supplement the product or service
3. internal Apps for employee use
4. Apps designed to make money

There are a number of drivers influencing organisations who are considering or implementing employee & customer facing Apps for mobile devices such as mobile phones and tablets and these include:

- Maintaining a competitive edge with a customer base that is increasingly using mobile devices for banking, e-commerce, information retrieval, service and product information and real time communication.

- Empowering employees by supporting a distributed workforce, providing workers access to key back end data and systems, using Apps to improve customer service levels in the field and saving cost by increasing operational efficiency.

- As more customers use mobile devices for online services, the deployment of well-designed Apps can be used to generate new business revenues, increase customer satisfaction and retention, provide immediate e-marketing messages, increase brand awareness and maintain up to date services and product information.

In addition well designed Apps give the end user an intuitive and easy to use experience increasing loyalty and lowering customer interaction costs.

Challenges

The commercial and operational challenges to most organisations planning to deploy Apps to multiple devices can be summarised as follows:

- How to develop & design Apps that can be deployed quickly and effectively to multiple devices and not having to manage multiple development teams and technologies.

- How to synchronise the deployment of applications to multiple devices with various technologies and form factors. For example iPhone 4, iPhone 5, Galaxy Android Tablet or iPad.

  Which device is the App to be deployed to first?
  Making all of the Apps look and function the same on each device?
  Handling software bugs & support on different devices?

- How to provide secure Apps and data on the device that cannot be hacked, compromised or reverse engineered. Indeed mobile devices are prone to being lost in public places and very sensitive, confidential and competitive data could be exposed to undesirable personnel.

- How to build Apps for multiple devices that are feature rich, provide an excellent user experience (UX), that are easy to use and how to utilise the full features of the device to which the App is targeted. For example screen layout, operating system, built in cameras, GPU, CPU, accelerometer, GPS, graphics capabilities etc.

- How to build an App that functions whilst both online and offline so maximum utilisation and productivity of the App is achieved. That is not easy when the App is web based.

- How to build Apps with integration to back end data is increasingly important, for example the ability to access company data on multiple database platforms such as Oracle, Microsoft SQL and Sybase. In addition full access to Cloud based systems is also required by a number of App types.

- How can the development and deployment of the Apps provide a fast Return on Investment, this is a major consideration. Consequently the choice of the technology to be used is a vital consideration to an organisation.

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Embarcadero Technologies approach to Multi Device Development

Android and iOS are the largest and hottest addressable mobile markets on the planet. The Embarcadero software tools provide multi device App development and deployment for these technologies by allowing one development team to create Apps from just **one codebase**. Then immediately compile and deploy true native code for multiple devices such as the iOS and Android phones and tablets.

These software tools have full capabilities for rapid device prototyping for each chosen device within a visual development environment. This allows for true native App design and development to each individual device and form factor which can then be compiled and deployed simultaneously on to the multiple devices, from the **one codebase.** This results in a significant saving in development cost and time.

One codebase & true native synchronised App deployment to multiple devices!

Developing Apps in true native code provides full utilisation of the device functionality and Features. It produces Apps that are well designed, have an excellent user interface, have a very high level of security, can be easily integrated into back end data and can be used both online and offline.

The Embarcadero software tools directly address the 5 essential factors and issues that were identified at the start of this paper:

COST
Embarcadero software tools ensure cost saving
- Saving in development time, one code base & synchronised deployment
- One software vendor and one technology
- Use existing development team and skill sets
- Less competitive losses in long cycles of development and deployment
- Faster deployment of apps, revisions, fixes = increased competitiveness
- Multiple deployment of Apps vs. single App deployment
- Faster Return On Investment

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SPEED

Embarcadero software tools generate fast App development and deployment

- Speed of development – one code base & multiple deployment
- Visual application development – rapid prototyping
- Faster code revision and maintenance – one code base
- True native coding utilises and addresses the full device capabilities
- True native coding results in faster performing applications
- Fast development + fast deployment + fast applications

SECURITY

Embarcadero software tools guarantee strong security

- True native coding ensures security of apps and data
- No intermediary run times
- Full data Encryption
- 256 bit AES strength on disk storage for mobile & server side
- Data controller friendly security across the whole product lifecycle
- Full security across all devices and platforms

BACK END INTEGRATION

Embarcadero software tools build for strong back end integration

- Lightning fast data connection with FireDAC
- One set of components for connection to all major databases
  Including Oracle, MSSQL, Sybase, IBM, InterBase
- Easy to use multiple platform data storage
- Provides MBaaS/REST components with design time support

DESIGN & USABILITY

Embarcadero software tools deliver true native Apps for a better UX

- Full visual environment development of native Apps
- Prototype Apps directly on devices and form factors for full UX
- Full access to advanced device capabilities with true native code
- Full application consistency across multiple devices
- True native Apps work on line and off line

For further details of Embarcadero multi device software tools visit:
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About Embarcadero Technologies:

Embarcadero Technologies empowers software developers and database professionals with award-winning tools to design, build, optimize, and run software applications and databases across multiple platforms and programming languages. Embarcadero serves more than three million software development professionals worldwide with IDEs and database tools that dramatically simplify and accelerate development. Embarcadero's software development tools are used in the most demanding vertical industries and by 90 of the Fortune 100 worldwide